

REMARKS/ARGUMENTS

Twenty-seven claims remain pending in the application: Claims 1-27. Reconsideration of the pending claims in view of the amendments above and remarks below is respectfully requested.

Turning to the specific objections and rejections:

Claim Rejection - 35 U.S.C. § 112, Second Paragraph

1. Claims 1-27 stand rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

The Examiner has suggested that the pending claims are indefinite because the type of solute and types of fluid have not been recited in the claim limitation, "more effective for removing the solute from a fluid relative to an inorganic gel coating that has not been molecularly imprinted," as found in each of independent claims 1, 10, 13, and 19.

Applicants respectfully disagree. The specification as filed does describe solutes and fluids which may be utilized in the invention. For example, the application describes the removal of exemplary solutes such as caffeine, cholesterol, and specific dissolved organic compounds at least at page 8, lines 6-9; lines 22-23 and page 10, lines 22-24; and page 10, line 28 through page 11, line 2. The application also describes the filtration of a solute from fluids such as tea, coffee, and drinking water at least at page 14, lines 21-22 and page 10, line 24 to page 11, line 2. Furthermore, in one

example at page 14, lines 21-22, Applicants state that a "use of filters of this invention [is] **to decaffeinate coffee or tea...**" In other words, the invention may be used, for example, to remove caffeine (a solute) from coffee or tea (fluids). Thus, the Applicant has within the text of the specification pointed to exemplary solutes and fluids, which are **consistent with the accepted meaning of the terms**, to which the invention may be applied.

As would be appreciated by one of ordinary skill in the art, any type of solute, within the ordinary meaning of solute, may be filtered out of any type of fluid, within the ordinary meaning of fluid, using the apparatuses and methods of the present invention so long as the solute is imprinted on an appropriate gel. One of ordinary skill in the art would understand the terms "solute" and "fluid" as used within the context of the pending claims. As such, Applicants respectfully submit that the present rejection is improper according to MPEP § 2173.02 which states:

In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, **the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent.**

See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000).

Bearing in mind the foregoing, because a person of ordinary skill in the art would appreciate the meaning of the terms "solute" and "fluid" as set forth in the claims, and, further, because the use of the terms in the claims and specification is consistent within the ordinary meaning of the terms, the rejection is improper. Thus, Applicants respectfully request that the Examiner withdraw the rejection under 35 USC 112, paragraph 2 from each of the pending claims, 1-27.

Claim Rejection - 35 U.S.C. § 102(b)

2. Claims 1-9, 19, 20, and 25 stand rejected under 35 USC 102(b) as being anticipated by PGPUBS US 2001/004013655, published 11/15/2001 of Wei et al.

Independent claims 1 and 19 of the present application provide an apparatus and method for removing a solute from a fluid with a permeable fibrous support material coated with a gel molecularly imprinted for the solute. As described in the application, the molecularly imprinted gel is useful for "filtering a solute with high selectivity."¹ Also as described in the application, a molecularly imprinted gel is one in which template molecules corresponding to the solute to ultimately be removed from a fluid are mixed with gel then washed out of the gel leaving a "molecular imprint" of the solute.² The resulting imprinted gel can advantageously "distinguish between a targeted solute and close chemical analogs thereof with excellent selectivity."³ For example, in one experiment described at page 26, line 14 to page 27, line 25 and Figure 7 of the present application, a fluid containing

¹ See the present application at page 7, lines 22-25

² See the present application at page 8, lines 15-21

³ See the present application at page 8, lines 27-28

caffeine was filtered through a adsorbent paper with a gel molecularly imprinted with caffeine while a fluid containing a close analog of caffeine, theophylline (differing from caffeine by a single methyl group), was run through a similar filter. The results of the experiment, as depicted graphically in Figure 7, indicate that "molecularly printed paper shows greater and more rapid binding capabilities for caffeine than theophylline."⁴ None of the art cited teaches or suggests a method by which such close analogs could be separated.

Conversely, Wei et al. describes a filter useful for non-specifically removing impurities from a fluid stream by physical adsorption and electrokinetic adsorption.⁵ Wei et al. does not discuss or even suggest filtering solutes out of a fluid based on molecular structure; this is because the filter described in Wei et al. is not capable of selectively filtering out a selected solute as the filter material of Wei et al. is not molecularly imprinted. Rather, Wei et al. discusses nonspecifically filtering out of a fluid any charged particle, inconsequential of molecular structure, in the range of 0.2 meq/g and 5.0 meq/g⁶ or any particle measuring at least 0.5 μm , again inconsequential of molecular structure.⁷ Wei et al. does not teach or suggest the use of molecular imprinting to assist in removal of solutes from solution.

Therefore, the apparatus and method described in Wei et al. are markedly different because Wei et al. clearly does not anticipate an "inorganic gel coating...molecularly imprinted for the solute" claimed in independent claims 1 and 19 of the

⁴ See the present application at page 27, lines 7-8

⁵ See Wei et al. at page 10, claim 17

⁶ See Wei et al. at page 1, paragraph 14

⁷ See Wei et al. at page 4, paragraph 43

present application. Because Wei et al. does not teach each and every limitation of the pending claims, the present rejection according to 35 USC 102(b) improper. As such, Applicants respectfully request that the Examiner withdraw the present rejection to independent claims 1 and 19. Because claims 8-9, 20, and 25 depend on claims 1 and 19, it is respectfully requested that the rejection be withdrawn from each of claims 1-9, 19, 20, and 25.

Claim Rejection - 35 U.S.C. § 103(a)

3. Claims 21-23, 26, and 27 stand rejected under 35 USC 103(a) as being obvious by PGPUBS US 2001/004013655, published 11/15/2001 of Wei et al. in view of USPN 5,906,743 of Cohen et al.

As discussed hereinabove, Wei et al. fails to teach or suggest an "inorganic gel coating...molecularly imprinted for the solute" as set forth in claim 19. Similarly, Cohen et al. fails to teach or suggest an imprinted gel. Therefore, the rejection according to 35 USC 103(a) is improper because the combination of Wei et al. and Cohen et al. do not teach each and every limitation of the claimed invention. Because each of claims 21-23, 26, and 27 depend from claim 19 and, therefore, include each of the limitations of claim 19, Applicants respectfully request that the rejection be withdrawn from claims 21-23, 26, and 27.

CONCLUSION

By way of the arguments provided hereinabove Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain any outstanding issues that require adverse action, it is respectfully requested that the Examiner telephone Richard Kaba at (312) 577-7000 so that such issues may be resolved as expeditiously as possible.

The Commissioner is hereby authorized to charge any additional fees which may be required by Applicants to Deposit Account No. 06-1135.

Respectfully submitted,

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